Summer 6-15-2016

THE ROLE OF SYNERGY IN USING ENTERPRISE ARCHITECTURE FOR BUSINESS TRANSFORMATION

Ida Asadi Someh
University of Melbourne, iasadi@unimelb.edu.au

Keith Frampton
University of Melbourne, keith.frampton@unimelb.edu.au

Michael J. Davern
University of Melbourne, m.davern@unimelb.edu.au

Graeme Shanks
University of Melbourne, gshanks@unimelb.edu.au

THE ROLE OF SYNERGY IN USING ENTERPRISE ARCHITECTURE FOR BUSINESS TRANSFORMATION

Research in Progress

Asadi Someh, Ida, The University of Melbourne, Victoria, Australia, iasadi@unimelb.edu.au
Frampton, Keith, The University of Melbourne, Victoria, Australia, keith.frampton@unimelb.edu.au
Davern, Michael, University of Melbourne, Victoria, Australia, m.davern@unimelb.edu.au
Shanks, Graeme, University of Melbourne, Victoria, Australia, gshanks@unimelb.edu.au

Abstract

Enterprise architecture (EA) provides an integrated representation of an organization's current and desirable future business capabilities, processes, systems, data and IT infrastructure. EA can interact with and enhance other organizational capabilities, including business transformation capabilities. Despite significant interest and investment in EA, there is little understanding of how EA can augment other organizational capabilities. In this research in progress paper, we focus on the role of EA in augmenting a firm's business transformation capability. We conceptualize a synergistic relationship between EA and a firm's business transformation capability and the emergent EA-enabled business transformation capability. We propose a research model that uses synergy and EA-enabled business transformation capability to explain how transformation outcomes and organizational benefits can be enhanced using EA. We argue that EA capability can lead to the exploitation of existing resources by sharing and reuse of assets and exploration of new capabilities by reconfiguring and integrating resources. At an organizational level, EA can increase flexibility, agility and business-IT alignment. The model forms the basis for planned mixed method empirical work combining case studies and a survey.

Keywords: Enterprise Architecture, Synergy, Systems theory, Business value.

1 Introduction

Enterprise Architecture (EA) provides an integrated representation of the current and desirable state of an organization's business and IT landscape (Lange et al. 2015), together with a road map to achieve the desired future state. EA uses diagrams, roadmaps and other architecture artefacts to represent the business capabilities, processes, systems, data and IT infrastructure within an organization. EA aims to align IT systems and digitized business processes with the high-level business strategy of the organization (Ross et al. 2006; Zachman 1987). In doing so, EA can contribute to organizational agility, and the effectiveness and efficiency of business processes (Frampton et al. 2015; Lange et al. 2015).

Although recent research has highlighted the importance of EA in initiating, executing and assessing business transformation (Aier et al. 2014; Simon et al. 2014; Tamm et al. 2015), little research has theorised and empirically tested the impact of EA as a capability in business transformations. Hence, we seek to examine the link between EA capability and business transformation capabilities. We define EA capability as the ability of enterprise architects in providing EA services (e.g. capability gap analysis) to different business areas using EA artefacts (e.g. capability models) (Frampton et al. 2015). Business transformation capability is an organization's ability to reconfigure or standardize its resources, or build new processes and systems to better compete in a rapidly changing environment.

We have two motivations for this research. First, we seek to understand the synergy between EA capability and business transformation capability. In isolation EA capability delivers minimal value to a firm. However, when the EA and business transformation capabilities are *synergistically* related (Asadi Someh and Shanks 2013a, 2016), they mutually reinforce each other, leading to outcomes greater than the additive effect of the individual capabilities. This is consistent with the process (Melville et al. 2004) and systems views (Nevo and Wade 2010) of the business value of IT resources. From the process view, EA capability creates business value by augmenting other organizational capabilities to create higher-order EA-enabled organizational capabilities (Bharadwaj 2000; Mithas et al. 2011). From the systems view, EA-enabled organizational capabilities emerge from the synergistic relationship between the two lower-level capabilities (EA capability and business transformation capability) (Asadi Someh and Shanks 2013a; Nevo and Wade 2010). However, little is known about how a synergistic relationship may form between a firm's EA capability and its business transformation capability, leading to the emergence of an EA-enabled business transformation capability, and ultimately business benefits.

Second, we seek to identify and operationalize a set of performance measures that are affected by EA capability. Recently, there has been a growing interest from academics and practitioners to justify the investment in EA capability and the organizational performance measures that are affected by EA capability (Frampton et al. 2015; Lange et al. 2015; Tamm et al. 2011). However, little evidence exists about the value of EA and most of the success stories are anecdotal. Particularly, there is limited theoretical research that identifies and robustly measures the benefits from EA (Lange et al. (2015) is an exception). Consequently, the benefits of EA as a capability remain poorly understood. We aim to use the concept of synergy to link EA capability with business transformation capability and explain the subsequent creation of organizational benefits.

The paper is organised as follows. We first discuss the background of the study, including EA, business transformation and synergy. Next, we develop two theoretical constructs to conceptualize the relationship between EA capability and business transformation capability: namely, synergy, and EA-enabled business transformation capability. We then propose a research model that explains how synergy between EA capability and business transformation capability can lead to a higher-order EA-enabled business transformation capability. We conclude the paper with directions for future research.

2 Background

In this section we review three relevant areas of the literature and synthesize them to develop our research question. First, we conceptualise EA as a service provision capability. Then we discuss the business transformations that EA can enable. Finally, we discuss synergy as a useful concept for explaining how a firm's EA-enabled business transformation capability emerges.

2.1 Enterprise Architecture as Service Provision

We use the notion of Enterprise Architecture Service Provision (Frampton et al. 2015) to conceptualize EA capability. This is more than just the traditional view of EA, which focuses on the creation and collection of EA artefacts and business processes (Ross et al. 2006). EA service provision capability emphasizes the advisory services that enterprise architects can provide to business. Hence, we define EA capability as the extent to which enterprise architects are able to communicate an integrated representation of an organization's business and IT landscape using the organization's EA artefacts (e.g. capability models etc.), together with guidance and roadmaps to achieve the organization's desirable state (Frampton et al. 2015; Lange et al. 2015; Toppenberg et al. 2015). Recent literature has acknowledged the importance of advisory services to organizations that utilize EA (Frampton et al. 2015).

2.2 Enterprise Architecture and Business Transformations

EA plays an the important role in enabling business transformations (Aier et al. 2014; Tamm et al. 2015; Toppenberg et al. 2015). We go beyond the IT-centric and business process view of the EA (Ross et al. 2006) and argue that EA can play a key role in initiating, guiding and assessing business transformations (Aier et al. 2014; Tamm et al. 2015). Theoretically, business transformations can be explained using dynamic capabilities (Teece et al. 1997). Dynamic capabilities involve modifying, renewing and reconfiguring organizational resources to respond to changes in turbulent environments (Pavlou and Sawy 2011; Pavlou and El Sawy 2010; Teece et al. 1997; Wheeler 2002). We adapt a dynamic capability theory called the Net-Enabled Business Innovation Cycle (NEBIC) (Wheeler 2002) to explain the role of EA in the business transformation process. NEBIC is an applied theory that includes four broad organizational capabilities required for transformations including (1) identifying IT-enabled transformation options, (2) matching these options with economic opportunities, (3) executing business innovation for growth and (4) assessing customer value. Adapting the NEBIC capability areas, we define a business transformation capability as the ability of an organization to reuse or reconfigure organizational resources by identifying IT-enabled transformation options, prioritizing these options be matching them with economic opportunities, implementing selected IT-based transformation solutions and assessing the value of the implemented solutions. We argue that EA capability can influence the four capability areas of business transformation capability, leading to EA-enabled business transformation capability.

2.2.1 Enterprise Architecture and Synergy

EA capability interacts with other organizational capabilities and if the relationship is synergistic, higher-order EA-enabled organizational capabilities emerge from the relationship (Nevo and Wade 2010). The concept of synergy is based on systems theory which involves interacting parts and the wholes that emerge from interaction (Burton-Jones et al. 2014). When the EA and other organizational capabilities are *synergistically* related (Asadi Someh and Shanks 2013a), they mutually reinforce each other, leading to the emergence of new capabilities that did not exist in the individual resources. EA capability and business transformation capability inherently belong to different communities of practice (Wegner 1999). EA people are typically not expert in business transformations and business transformation people (i.e. people working in organizational units with titles such as continuous improvement or business transformation or similar labels) are typically not trained in EA goals and artefacts. However, they can interact and together create an EA-enabled business transformation capability, which is a transformation capability that is facilitated by EA goals, artefacts, and people. To date, there is little known about how synergy can help to develop an EA-enabled business transformation capability and subsequently influence organizational outcomes. Therefore, we ask: *How does synergy between EA capability and business transformation capability contribute to transformation outcomes and, ultimately, organizational benefits?*

3 Theoretical Development

In this section, we develop two constructs to answer the research question: *EA-enabled Business Transformation Capability* and *Synergy* between EA capability and business transformation capability.

3.1 EA-enabled Business Transformation Capability

EA-enabled business transformation capability captures the extent to which EA informs and enables a business transformation capability. We adapt the four capability areas from NEBIC (Wheeler 2002) and explain how EA informs each capability area. As the NEBIC theory has both a process view and a variance view it provides a foundation for our rich and multi-dimensional construct, EA-enabled Business Transformation Capability. We explore below the four dimensions we derived from NEBIC.

3.1.1 Identify new IT-enabled Transformation Options

EA capability uses artefacts (e.g. as-is and capability models) to represent the current business and IT capabilities in an organization. The EA artefacts can help to identify problems, gaps in capabilities and inefficiencies associated with current business processes and IT systems throughout the organization. EA capability can identify IT-enabled transformation options that would (1) exploit opportunities for asset sharing and reuse of existing business processes and systems or (2) explore opportunities for reconfiguration of resources and creating new capabilities, business processes and systems (Bernard 2005; Tamm et al. 2011; Toppenberg et al. 2015). EA capability can provide and communicate IT-based transformation options that are aligned with the overall business strategy (e.g. by developing to-be diagrams) (Tamm et al. 2015). In doing so, EA capability can go beyond just defining the vision for IT, and support business managers in framing the vision for the business (Simon et al. 2014).

3.1.2 Matching Economic Opportunities with EA Transformation Options

EA capability can use EA artefacts to assess the value, feasibility and viability of IT-enabled business options and prioritize them. EA people can use roadmaps to represent the transformation journey associated with each IT-enabled transformation option. Communicating with executives and senior managers is the key to justifying the value and feasibility of each transformation option. Moreover, communication with business executive enables a common understanding of the preferred future solution (Lange et al. 2015). This can lead to the selection of viable transformation solutions.

3.1.3 Implement EA Transformation Solution

EA can contribute to implementation of the solution by (1) providing structured and appropriate governance of the transformation activities and responsibilities (Ross et al. 2006), (2) providing guidance for on-going projects during the transformational journey (Tamm et al. 2015), and (3) translating and communicating concepts, goals and approaches to enable a common understanding with different stakeholders in a variety of projects and programs (Boh and Yellin 2007; Lange et al. 2015).

3.1.4 Assessing Value using EA

EA can help to assess the value of a business transformation by using EA artefacts and by interacting with different stakeholders (Abraham et al. 2015; Boh and Yellin 2007). EA artefacts such as as-is and to-be diagrams can help to investigate how much of the initial problems were addressed. Furthermore, EA people can assess the transformation outcomes using the perceptions and behaviours of different stakeholders (Wheeler 2002), while interacting with them.

3.2 Synergy in EA-enabled Business Transformation Capability

Synergy is defined using the enablers and mechanisms that are required for the emergence of EA-enabled business transformation capabilities. We adapt the concept of synergy from Asadi Someh and Shanks (2013a) to understand the enablers and mechanisms that underlie the emergence of EA-enabled business transformation capability. The enablers of a synergistic interaction refer to the factors that facilitate the emergence of new capabilities. Mechanisms are the activities that take place among resources to realize their potential synergy. Descriptions of the enablers and mechanisms of synergy between EA service provision capability and business transformation capability follow.

3.2.1 Enablers of Synergy

Compatibility is achieved when resources are capable of seamlessly working with each other (Nevo and Wade 2010). The compatibility of EA capability with business transformation capability requires that enterprise architects understand the transformation requirement and processes and can communicate with the business transformation people about their artefacts, approaches and goals. Similarly, it requires business transformation people understand the EA outputs, terminologies and can take actions based on EA artefacts and representations. Compatibly ensures that people from both areas share a common language and can effectively communicate.

Integration effort is the effort of management to bring systems (people, processes, or technologies) together, support and guide their interaction congruent with organizational goals (Nevo and Wade 2010). The integration effort of management acts as a catalyst in initiating, supporting and guiding the interaction between enterprise architects and business transformation people. Without this effort, business transformation people may not change from their traditional processes to EA-enabled transformation processes. For this, management should believe in EA and establish common goals and agreed ways of working between people from the two areas and finally support their interaction (Foorthuis et al. 2010).

3.2.2 Mechanisms of Synergy

We distinguish between complementarity and boundary spanning mechanisms (Asadi Someh and Shanks 2013a). Complementary mechanisms refer to the processes and activities by which resources are combined to enhance and complement each other's functionalities and include reinforcement, flanking and compensation (Ferratt et al. 2012). *Reinforcement* requires that enterprise architects and business transformation people work together and critically contribute to each other's effectiveness (Ferratt et al. 2012; Horgan and Mühlau 2006). EA capability can reinforce business transformation capability by providing and communicating about EA artefacts that will engage and inform different stakeholders during the transformation. *Flanking* mechanisms occur when EA capability creates conditions that enable business transformation capability to improve its effectiveness (Ferratt et al. 2012). For example, EA capability can guide business transformation processes by providing governance of the projects, activities and responsibilities. In the case of flanking, EA capability just provides the input (e.g. governance structure) for business transformation people, rather than engaging with them to accomplish organizational tasks. In the case of *compensation* mechanisms, EA capability can block or diminish the negative effects of business transformation capability with respect to organizational goals (Ferratt et al. 2012; Wade and Hulland 2004). EA people can consistently work with business transformation people and other stakeholders of the transformation to ensure that the people, projects and activities are aligned with the overall business strategy (Foorthuis et al. 2010).

Boundary spanning mechanisms refer to the processes and activities that help people and artefacts to bridge the knowledge gap between domains and make a shared field for interaction (Wegner 1999) and include embeddedness, learning and influence. *Embeddedness* occurs when EA people create social ties with business transformation people based on familiarity, trust and commitment (Foorthuis et al. 2010; Granovetter 1985). These social ties connect people in the two areas, enabling them to collaborate, share knowledge and develop social capital. The *Learning* mechanism helps individuals from the EA and business transformation areas to learn from their social environment. This mechanism helps enterprise architects and business transformation people to sense the environment and exploit the opportunities offered to them (Chellappa et al. 2010; Venkatesh and Bala 2012). The *influence* mechanism pushes individuals to conform to norms, traditions and social expectations (Venkatesh and Bala 2012). Based on this mechanism, EA people can encourage the business transformation people to comply with their rules, structures and values (Foorthuis et al. 2010). Further, people from the EA and business transformation areas can develop a shared mental model through their interactions and become aware of each other's plans and reactions.

4 Research model

The research model (presented in Figure 1) is based on the concept of synergy, and explains how EA capability synergizes with business transformation capability to ultimately create organizational benefits. The synergistic interaction between EA capability and business transformation capability gives rise to EA-enabled business transformation capability, which can contribute to transformation outcomes and organizational benefits. The level of environmental turbulence will influence the transformation outcomes created from EA-enabled business transformation capability. The definition of the constructs are summarised in Table 1 and hypotheses follow.

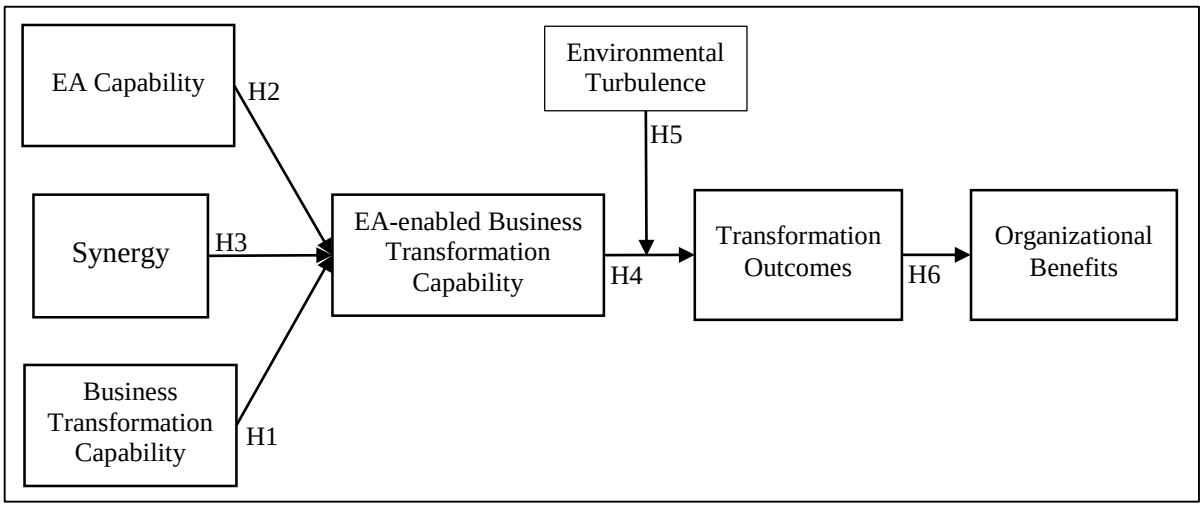

Figure 1. Organizational Benefits from EA-enabled Business Transformation Capability

EA Capability	The extent to which enterprise architects are able to communicate an integrated representation of an organization's business and IT landscape using the organization's EA artefacts, together with guidance and roadmaps to achieve the organization's desirable state.	(Frampton et al. 2015)
Business Transformation Capability	The extent to which organizations change organizational resources by identifying transformation options, matching them with economic opportunities, executing selected business transformations and assessing their value.	(Wheeler 2002)
Synergy	The extent to which EA capability and business transformation capability are (1) compatible and integrated, (2) complement each other using reinforcement, flanking and compensation and (3) span their boundaries using learning, embeddedness and influence mechanisms.	(Asadi Someh and Shanks 2013a)
EA-enabled Business Transformation Capability	The extent to which organizations are able to use EA for (1) asset sharing and (2) reconfiguration and renewal of organizational resources.	(Bernard 2005)
Transformation Outcomes	The volume and effectiveness of (1) sharing and reuse of existing resources to exploit efficiencies, (2) reconfigurations of resources to create new capabilities.	(Foorthuis et al. 2010)
Environmental Turbulence	The extent of uncertainty or unpredictability in consumer preferences due to technology developments or market changes.	(Pavlou and El Sawy 2006)
Organizational Benefits	The extent to which organizations achieve agility, flexibility and business-IT alignment and process improvement by leveraging EA in business transformations.	(Lange et al. 2015)

Table 1. Definition of constructs in the research model

4.1 Hypotheses Development

The hypotheses highlight three aspects of the research model: (1) emergence of EA-enabled business transformation capability, (2) creation of transformation outcomes and the moderating role of environmental turbulence and (3) creation of organizational benefits.

4.1.1 Emergence of EA-enabled Business Transformation Capability

Three variables influence the EA-enabled Business Transformation Capability construct: Business Transformation Capability, EA Capability, and Synergy.

Business Transformation Capability is a first-order capability that helps to develop EA-enabled Business Transformation Capability by providing four set of sub-capabilities required for resource reconfiguration. The four sub-capabilities for business transformation include (1) identify new IT-enabled business options, (2) match these with economic opportunities, (3) implement selected transformation solutions and (4) assess value (Wheeler 2002). These capabilities are essential in resource configurations. Hence, we hypothesize that:

H1: *Business Transformation Capability has a positive effect on EA-enabled Business Transformation Capability.*

EA Capability is a first-order capability that helps to develop EA-enabled Business Transformation Capability by (1) creating high-quality EA artefacts including representations of the current and future business processes, capabilities, data, IT applications and IT infrastructure, (2) by communicating the business and IT landscape with transformation people and building trust, and (3) providing roadmaps, principles, standards, guidance and governance for change and transformation (Boh and Yellin 2007; Frampton et al. 2015; Lange et al. 2015; Tamm et al. 2015). High-quality EA capability can augment the four capability areas required for business transformation (for details refer to Section 3.1). Hence, we hypothesize that:

H2: *EA Capability has a positive effect on EA-enabled Business Transformation Capability.*

Synergy enables the development of EA-enabled business transformation capability by (1) ensuring that the EA service provision capability and business transformation capability are compatible and integrated, (2) complement each other using reinforcement, flanking and compensation mechanisms and (3) span the their boundaries using learning, embeddedness and influence mechanisms (Asadi Someh and Shanks 2013a, 2013b). The synergy ensures that the first-order EA Capability and Business Transformation Capability are properly combined, leading to higher-order EA-enabled Business Transformation Capability. The emergent EA-enabled Business Transformation Capability encompasses capabilities that are informed by EA capability (for details refer to Section 3.1). We hypothesize that:

H3: *Synergy between EA capability and business transformation capability has a positive effect on EA-enabled Business Transformation Capability*

4.1.2 Creation of Transformation Outcomes and the Moderating Role of Environmental Turbulence

The EA-enabled Business Transformation Capability is a higher-order transformation capability formed from the synergistic interaction between EA capability and business transformation capability (Burton-Jones et al. 2014). EA-enabled Business Transformation Capability encompasses new and extended capabilities that the EA capability and business transformation capability do not individually possess. The emergent EA-enabled business transformation capability can leverage EA to identify IT-enabled transformation options, prioritize them, implement them and assess their impact. The EA-enabled capability can empower organization to initiate, implement and assess transformations, leading to increased Transformation Outcomes. Transformation Outcomes include the level and effectiveness of (1) asset sharing and reuse, and (2) resource integration and reconfiguration. Asset sharing and reuse occur as a result of exploiting existing resources. Resource reconfiguration result from new resource combinations and building new systems and capabilities (Bernard 2005; Teece et al. 1997).

H: *EA-enabled Business Transformation Capability has a positive impact on Transformation Outcomes.*

In addition, we argue that the impact of EA-enabled Business Transformation Capability on Transformation Outcomes is more pronounced in higher levels of Environmental Turbulence. In turbulent environments there is a constant need or opportunity for resource reconfigurations that lead to developing new capabilities and systems rather than exploiting existing resources for efficiency purposes (Pavlou and El Sawy 2006; Teece et al. 1997). Resource reconfigurations can help organizations to keep up with external changes and compete with their rivals. This can ultimately increase the number and effectiveness of transformations.

H5: *Environmental Turbulence moderates the relationship between EA-enabled Business Transformation Capability and Transformation Outcomes.*

4.1.3 Creation of Organizational Benefits

EA-enabled Business Transformation Capability can indirectly create Organizational Benefits. Improved resource utilization in terms of both reuse and reconfiguration of resources can lead to increased business-IT alignment, process improvement, organizational agility and organizational flexibility (Frampton et al. 2015; Lange et al. 2015; Tamm et al. 2011, 2015). We argue that Transformation Outcomes will positively influence Organizational Benefits.

H6: *The level of Transformation Outcomes has a positive impact on Organizational Benefits.*

5 Conclusion and Further Work

This paper proposed a model that explains how EA capability can synergistically interact with business transformation capability to develop higher-order EA-enabled business transformation capability. The synergy between EA and business transformation capabilities is realized when they are compatible and integrated, they can span their boundaries and complement each other. The emergent EA-enabled business transformation capability encompasses four capabilities, derived from NEBIC, that are enabled and informed by EA artefacts and communication capabilities between EA people and business transformation people. The enablers and mechanisms of synergy provides managerial guidance on how to synergistically accommodate EA people and artefacts in relation to other resources and achieve benefits. The research model can also help to justify the business value of EA investments.

This is a research in progress paper, and future research plans include conducting (1) case studies to better understand the constructs and the relationships underlying the propositions in the model, and (2) a survey to develop detailed measures for constructs and test the model. This mixed-method research approach supports both gaining deep insights to develop useful theories and confirmation of the insights in different natural settings (Neuman 2006; Venkatesh et al. 2013). The purpose of conducting mixed-method research is "developmental" (Venkatesh et al. 2013). The inferences made in the qualitative study will inform the quantitative study. The objective of conducting case studies is to understand the underlying mechanisms undertaken by organizations to combine EA capability with business transformation capability to achieve synergy. We will conduct semi-structured interviews with both enterprise architects as well business transformation managers. The findings will also help to refine and validate measurement items for constructs in the research model. The objective of the cross-sectional survey is to evaluate the impact of synergy in attaining business value from EA capability in a large sample of organizations. This is consistent with the business value of IT literature that has attempted to link IT resources and capabilities to business value (Kohli 2008). We will adopt and adapt measures where relevant instruments exist. Otherwise, we will develop measures by generating items to represent the constructs, ensuring the validity and reliability of the constructs, specifying the measurement model and refining and validating the measures through pre-testing and pilot-testing the survey (MacKenzie et al. 2011). We will survey both enterprise architects and business transformation managers in large Australian organizations.

6 References

Abraham, R., Aier, S., and Winter, R. 2015. "Crossing the line: overcoming knowledge boundaries in enterprise transformation," *Business & Information Systems Engineering* (57:1), pp. 3–13.

Aier, S., Weiss, S., Winter, R., and Rytz, B. 2014. "Untangling EA's Long Path of Becoming a Partner for Business Transformation – The Case of Swiss Federal Railways," *Pre-ICIS 2014 MISQE EA Workshop*.

Asadi Someh, I., and Shanks, G. 2013a. "The Role of Synergy in Achieving Value from Business Analytics Systems," in *International Conference on Information Systems(ICIS)*, Milan, Italy.

Asadi Someh, I., and Shanks, G. 2013b. "Realising Synergy in Business Analytics Enabled Systems," in *24th Australasian Conference on Information Systems*, Melbourne, p. paper 251.

Asadi Someh, I., and Shanks, G. 2016. "Emergence of Business Value from Complementary Interactions between Informational and Transactional IT systems," *Australian Journal of Information Systems* (20), pp. 1–15.

Bernard, S. A. 2005. *An Introduction to Enterprise Architecture* (2nd editio.), Bloomington, IN: AuthorHouse.

Bharadwaj, A. 2000. "A Resource-Based Perspective on Information Technology Capability and Firm Performance: An Empirical Investigation," *MIS Quarterly* (24:1), p. 169 (doi: 10.2307/3250983).

Boh, W. F., and Yellin, D. 2007. "Using Enterprise Architecture Standards in Managing Information Technology," *Journal of Management Information Systems* (23:3), pp. 163–207.

Burton-Jones, A., Mclean, E. R., and Monod, E. 2014. "Theoretical perspectives in IS research : from variance and process to conceptual latitude and conceptual fit," *European Journal of Information Systems*, pp. 1–16.

Ferratt, T. W., Prasad, J., and Enns, H. G. 2012. "Synergy and Its Limits in Managing Information Technology Professionals," *Information Systems Research* (23:4), pp. 1175–1194.

Foorthuis, R., Steenbergen, M. Van, Mushkudiani, N., Bruls, W., Brinkkemper, S., and Bos, R. 2010. "On course, but not there yet: Enterprise Architecture Conformance and Benefits in Systems Development," *31st International Conference on Information Systems ICIS* (december 2010), pp. 1–21.

Frampton, K., Shanks, G., Tamm, T., Kurnia, S., and Milton, S. 2015. "Enterprise Architecture Service provision: pathways to value," *Twenty-Third European Conference on Information Systems (ECIS), Münster, Germany, 2015*, pp. 1–9.

Granovetter, M. 1985. "Economic Action and Social Structure: The Problem of Embeddedness," *American Journal of Sociology* (91:3), UChicago Press, pp. 481–510.

Horgan, J., and Mühlau, P. 2006. "Human Resource Systems and Employee Performance in Ireland and the Netherlands: A Test of the Complementarity Hypothesis," *The International Journal of Human Resource Management* (17:3), pp. 414–439.

Kohli, R. 2008. "Business value of IT: An essay on expanding research directions to keep up with the times," *Journal of the association for information* (9:1), pp. 23–39.

Lange, M., Mendling, J., and Recker, J. 2015. "An empirical analysis of the factors and measures of Enterprise Architecture Management success," *European Journal of Information Systems* (8:1), Nature Publishing Group, pp. 23–32.

MacKenzie, S., Podsakoff, P., and Podsakoff, N. 2011. "Construct measurement and validation procedures in MIS and behavioral research: integrating new and existing techniques," *MIS Quarterly* (35:2), pp. 293–334.

Melville, N., Kraemer, K., and Gurbaxani, V. 2004. "Review: Information Technology and

Organizational Performance: An Integrative Model of IT Business Value," *MIS Quarterly* (28:2), pp. 283–322.

Mithas, S., Ramasubbu, N., and Sambamurthy, V. 2011. "How Information Management Capability Influences Firm Performance," *MIS Quarterly* (35:1), pp. 237–256.

Neuman, W. L. 2006. *Social Research Methods: Qualitative and Quantitative Approaches*, Pearson Education Company.

Nevo, S., and Wade, M. 2010. "The Formation and Value of IT-enabled Resources: Antecedents and Consequences of Synergistic Relationships," *MIS Quarterly* (34:1), pp. 163–183.

Nevo, S., and Wade, M. 2011. "Firm-Level Benefits of IT-enabled Resources: A Conceptual Extension and an Empirical Assessment," *The Journal of Strategic Information Systems* (20:4), pp. 403–418.

Pavlou, P. a, and Sawy, O. a El. 2011. "Understanding the ' Black Box ' of Dynamic Capabilities 1 Understanding the ' Black Box ' of Dynamic Capabilities," *Decision Sciences Journal of Innovative Education* (42:1), pp. 239–273.

Pavlou, P. a., and El Sawy, O. a. 2006. "From IT Leveraging Competence to Competitive Advantage in Turbulent Environments: The Case of New Product Development," *Information Systems Research* (17:3), pp. 198–227.

Pavlou, P. a., and El Sawy, O. a. 2010. "The 'Third Hand': IT-Enabled Competitive Advantage in Turbulence Through Improvisational Capabilities," *Information Systems Research* (21:3), pp. 443–471 (doi: 10.1287/isre.1100.0280).

Ross, J., Weill, P., and Robertson, D. 2006. *Enterprise Architecture as Strategy*, Harvard Business School Pres.

Simon, D., Fischbach, K., and Schoder, D. 2014. "Enterprise architecture management and its role in corporate strategic management," *Information Systems and e-Business Management* (12:1), pp. 5–42 (doi: 10.1007/s10257-013-0213-4).

Tamm, T., Seddon, P. B., Shanks, G., Reynolds, P., and Framption, K. M. 2015. "How an Australian Retailer Enabled Business Transformation Through Enterprise Architecture," *Forthcoming in MIS Quarterly Executive* (14:4), pp. 181–193.

Tamm, T., Seddon, P. B., Shanks, G., Reynolds, P., and Shanks, G. 2011. "How does enterprise architecture add value to organisations?," *Communications of the Association for Information Systems* (28:1).

Teece, D. J., Pisano, G., Shuen, A., and Shuen, A. M. Y. 1997. "DYNAMIC CAPABILITIES AND STRATEGIC MANAGEMENT," *Strategic Management Journal* (18:7), pp. 509–533.

Toppenberg, G., Shanks, G., and Henningsson, S. 2015. "How Cisco Systems Used Enterprise Architecture Capability to Sustain Acquisition-Based Growth," *Forthcoming in MIS Quarterly Executive* (14:4:4), pp. 151–168.

Venkatesh, V., Brown, S., and Bala, H. 2013. "Bridging the Qualitative-Quantitative Divide: Guidelines for Conducting Mixed Methods Research in Information Systems," *MIS Quarterly* (37:1), pp. 1–34.

Wegner, E. 1999. *Communities of practice: Learning, meaning, and identity*, Cambridge University Press.

Wheeler, B. 2002. "NEBIC A Dynamic Capability Theory for Assessing Net-enablement," *Information Systems Research* (13:2), pp. 125–146.

Zachman, J. A. 1987. "A Framework for Information Systems Architectur," *IBM Systems Journal* (26:3), pp. 276– 292.